



WORK SHEET

Module 4.1

Understanding Vehicle Balance Acceleration and Braking

Name _____

Date _____

Score _____

Complete the following questions during the discussion of vehicle balance:

1. Define Vehicle Balance:

2. If a driver brakes too hard, the vehicle weight shifts to the _____

3. If a driver accelerates too hard, the vehicle weight shifts to the _____

4. If a driver steers too quickly to the right, the vehicle weight shifts to the _____

5. If a driver steers too quickly to the left, the vehicle weight shifts to the _____

6. Explain how seating position may affect the balance of your vehicle:

7. What is the problem shown by the vehicle below?





WORK SHEET Answer

Module 4.1

Vehicle Balance

1. Define Vehicle Balance:

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Page 1, paragraph 2

The distribution of the weight of the vehicle on the tires as they meet the ground.

If there is no acceleration or deceleration, the vehicle is traveling at a constant speed or stopped, the suspension is set on center and the steering and traction condition is considered to be in balance.

2. If a driver brakes too hard, the vehicle weight shifts to the _____

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Page 3, paragraph 1

When brakes are applied, weight or center of mass is transferred to the front of the vehicle. If braking is hard, there is a noticeable drop of the hood and rise of the rear of the vehicle and occupants feel forward movement.

3. If a driver accelerates too hard, the vehicle weight shifts to the _____

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Page 2, paragraph 6

When acceleration is applied, weight or center of mass is transferred toward the rear of the vehicle. If acceleration is sudden and hard there is a noticeable drop of the rear of the vehicle and occupants feel the rear of the vehicle dropping down

4. If a driver steers too quickly to the right, the vehicle weight shifts to the _____

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Page 2, paragraph 5

Occupants may or may not feel forward movement toward the corner of the vehicle opposite the direction of the turn.

5. If a driver steers too quickly to the left, the vehicle weight shifts to the _____

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Page 2, paragraph 5

Occupants may or may not feel forward movement toward the corner of the vehicle opposite the direction of the turn.

6. Explain how seating position may affect the balance of your vehicle:

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Page 2, paragraph 1, Page 3, paragraph 3 & 4

Drivers need to sit in a comfortable, erect position squarely behind the steering wheel.

The key to a good braking technique is to stabilize the foot and control brake pressure with the forces of the ankle and toes rather than thigh muscles.

7. What is the problem shown by the vehicle below?

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Page 2, paragraph 6, Page 1, paragraph 7

Applying the brakes when cornering at too high a speed has little effect relative to slowing the vehicle, but may have a highly noticeable effect of producing traction loss due to severe weight shift.

Steering too quickly in combination with sudden brake application may contribute to crashes when a driver loses control and leaves the roadway, often in a roll-over.